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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,002	03/31/2004	Chih-Kuang Chen	SUND 506	5214
23995	7590	12/10/2007		
RABIN & Berdo, PC 1101 14TH STREET, NW SUITE 500 WASHINGTON, DC 20005			EXAMINER AMADIZ, RODNEY	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 12/10/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/813,002	Applicant(s) CHEN, CHIH-KUANG	
	Examiner Rodney Amadiz	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 10, 11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (U.S. Patent 5,479,187—herein referred to as “Chen”).

As to **Claim 10**, Chen teaches a liquid crystal display, comprising: a scan driver circuit for outputting a scan activating signal (***Figs. 1 and 2, Reference Number 43***); a liquid crystal display panel for receiving the scan activating signal to generate a frame display frequency (***Col. 3, line 50—Col. 4, line 25***); a first rotation speed control circuit for receiving the scan activating signal to control a first rotation speed of a first motor (***Fig. 3, Reference Number 26 and Col. 5, lines 7-33—note motor is inherent to spin reflector***); a first light source (***Fig. 3, 18***) disposed along with the liquid crystal display panel to provide a first light beam (***See Fig. 3***); a first polygonal column reflector connected to the first motor for synchronizing with the first rotation speed of the first motor to reflect the first light of the first light source onto the liquid crystal display panel (***See Figs. 3-9, Reference Numbers 22 & Reference Number 36 for Figs. 7-9***); wherein the first light beam is adjusted to be reflected onto the liquid crystal display

panel to synchronously correspond to the frame display frequency of the liquid crystal display panel (**Col. 5, lines 22-33**).

Chen only teaches one rotation speed control circuit, one second rotation speed monitor, one light source, one light beam disposed along with the liquid crystal display and one polygonal column reflector connected to one motor. Chen fails to teach a second rotation speed control circuit, a second rotation speed motor, a second, a second light source with a second light beam and a second polygonal column reflector connected to the second motor for synchronizing with the second rotation speed of the second motor to reflect the second light of the second light source on the liquid crystal display. Examiner cites *St. Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8, 11 (7th Cir. 1977) to teach that it is well known and obvious to duplicate parts for a multiplied effect. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to provide a second rotation speed control circuit, a second rotation speed motor, a second, a second light source with a second light beam and a second polygonal column reflector connected to the second motor for synchronizing with the second rotation speed of the second motor to reflect the second light of the second light source on the liquid crystal display in the liquid crystal display taught by Chen to create a brighter display as supported by the case law stated above.

As to **Claim 11**, Chen teaches the polygonal column reflector further comprising a column body with a plurality of body side faces (**See Fig. 3, Reference Number 22 and faces 22a-22f**); and a plurality of reflecting materials disposed onto the body side

faces, respectively (*Col. 9, lines 54-57—note that the duplication of parts yields the same elements on the second polygonal column reflector*).

As to **Claim 13**, Chen teaches that the reflecting materials are a plurality of reflecting mirrors (*Col. 9, lines 54-57*).

As to **Claim 14**, Chen fails to teach a hollow column body. However, the specification shows no apparent benefits for having the column body with a hollow inside. Therefore, having the column body being hollow is clearly a design choice based on the specific requirement of the claim. Furthermore, it would have been obvious to one of ordinary skill in the art to include any type of column body, including a column body that is hollow inside, into the liquid crystal display taught by Chen since any column body would work well at rotating the reflecting materials.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Ang (U.S. Patent 5,126,873—herein referred to as “Ang”).

As to **Claim 12**, Chen fails to teach that the reflecting materials are a plurality of aluminum slices. Examiner cites Ang to teach a polygonal reflector made of aluminum (*Col. 4, lines 17-18*). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to provide aluminum slices as taught by Ang in the polygonal column reflector taught by Chen in order to provide a reflector that is durable.

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Yamagishi et al. (U.S. Patent 6,511,184—herein referred to as “Yamagishi”).

As to **Claim 15**, Chen fails to teach a first convex lens disposed between the first light source and the first polygonal column reflector for focusing the first light from the first light source on the reflecting side faces of the first polygonal column reflector. Chen also fails to teach a second convex lens disposed between the second light source and the second polygonal column reflector for focusing the second light beam from the second light source on the reflecting side faces of the second polygonal column reflector. Examiner cites Yamagishi to teach a convex lens disposed between the light source and the polygonal column reflector for focusing the light from the light source on the reflecting side faces (**Fig. 1, Reference Numbers 210R, 210B, 210G**). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the use of a convex lens disposed between the first and second light sources and the first and second polygonal column reflectors respectively as taught by Yamagishi in the liquid crystal display taught by Chen in order to focus the light from the light source on the reflector (**Yamagishi—Col. 11, lines 47-65**).

Response to Arguments

5. Applicant's arguments with respect to claims 10-15 have been considered but are moot in view of the new ground(s) of rejection.

The Applicant argues that the cooperation of the second rotation speed control circuit, the second light source, and the second polygonal column reflector synchronous with the first ones results in unexpected results. Specifically, the unexpected results enhance the overall luminance of the liquid crystal display panel 212 and further adjust the phase difference of the scan between the two light beams to achieve an optimization of motion picture quality. Examiner respectfully disagrees that these are unexpected results. It is the Examiners position that these are not unexpected results. It is old and well-known that adding a secondary light source to a display area increases the overall luminance of the display. Furthermore, it is the Examiners position that further adjusting the phase difference of the scan between the two light beams to achieve an optimization of motion picture quality is not an unexpected result; rather it is a calibration that must take place if the image is to be recognized. For instance, if the two systems (i.e. motor control circuits, light sources and reflectors) are not in sync with each other, they will work against each other only to provide distorted images on the panel; therefore, the systems need to work together to provide a clear image.

The Applicant also argues that Chen does not teach that "the first light beam is adjusted to be reflected onto the LCD panel to synchronously correspond to the frame display frequency of the LCD panel" (Pg. 6). Examiner respectfully disagrees. Please note the following citation Chen—Col. 5, lines 22-33.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney Amadiz whose telephone number is (571) 272-7762. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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